

UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Group: Attorney Docket # 2018

Applicant(s) : FIEDLER, G., ET AL

Serial No. : :

Filed : :

For : CIRCUIT ARRANGEMENT FOR GENERATING
SQUARE PULSES

SIMULTANEOUS AMENDMENT

March 25, 2002

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

S I R S:

Simultaneously with filing of the above identified application
please amend the same as follows:

In the Claims:

Cancel all claims without prejudice.

Substitute the claims attached hereto.

REMARKS:

This Amendment is submitted simultaneously with filing of the above identified
application.

With the present Amendment applicant has amended the claims so as to eliminate
their multiple dependency.

20090326-00263001

Consideration and allowance of the present application is most respectfully requested.

Respectfully submitted,



Michael J. Striker
Attorney for Applicant(s)
Reg. No. 27233

209250-60258001

Claims

1. A circuit arrangement for generating square pulses,
5 having an edge-triggered flip-flop (1) and at least one
comparator (2), whose output is connected to the trigger input of
the flip-flop (1), and an energy-storing element (3), which is
charged in alternation as a function of the switching state of
10 the flip-flop (1), and at least one switching threshold resistor
(4) is connected in series with the energy-storing element (3),
at which resistor a voltage generated by the current flowing
through the energy-storing element (3) drops, which voltage is
fed to the signal input of the comparator (2), characterized in
15 that the energy- storing element (3) is disposed in the
transverse branch of a bridge, in each of the four bridge
segments of which a respective switch (7, 8, 9, 10) is disposed,
and the switches (7, 8, 9, 10) are each connected in pairs in
crossover fashion (7, 10 and 8, 9, respectively) by the flip-flop
20 (1), so that the current flow in the transverse branch is
reversible, and that the bridge is connected in series with the
switching threshold resistor (4), and the junction point of the
bridge to the switching threshold resistor (4) is connected to
the signal input (2a) of the comparator (2).

25 2. The circuit arrangement of claim 1, characterized in
that the energy-storing element (3) is an inductive resistor.

30 3. The circuit arrangement of claim 1 [or 2],
characterized in that the inductive resistor (3) is a magnetic
field probe (12).

4. The circuit arrangement of [one of claims 1-3] claim 1,

characterized in that the magnetic field probe (12) is used to detect the magnetic field of a core (13) of a compensation current sensor.

5 5. The circuit arrangement of [one of claims 1-4] claim 1, characterized in that the comparator (2) is an analog comparator, which as its output signals furnishes digital signals.

10 6. The circuit arrangement of [one of claims 1-4] claim 1, characterized in that the comparator (2) is embodied as a digital gate.

15 7. The circuit arrangement of [one of claims 1-6] claim 1, characterized in that the switches (7, 8, 9, 10) are MOSFETs, of which two (9, 10) are triggered directly and two (7, 8) are triggered via inverters (5, 6) from the outputs (1a, 1b) of the flip-flop (1).

20 8. The circuit arrangement of [one of claims 1-7] claim 1, characterized in that in the transverse branch of the bridge, a series resistor (11) is connected in series with the energy-storing element (3).

Claims

1. A circuit arrangement for generating square pulses,
5 having an edge-triggered flip-flop (1) and at least one
comparator (2), whose output is connected to the trigger input of
the flip-flop (1), and an energy-storing element (3), which is
charged in alternation as a function of the switching state of
10 the flip-flop (1), and at least one switching threshold resistor
(4) is connected in series with the energy-storing element (3),
at which resistor a voltage generated by the current flowing
through the energy-storing element (3) drops, which voltage is
fed to the signal input of the comparator (2), characterized in
15 that the energy- storing element (3) is disposed in the
transverse branch of a bridge, in each of the four bridge
segments of which a respective switch (7, 8, 9, 10) is disposed,
and the switches (7, 8, 9, 10) are each connected in pairs in
crossover fashion (7, 10 and 8, 9, respectively) by the flip-flop
20 (1), so that the current flow in the transverse branch is
reversible, and that the bridge is connected in series with the
switching threshold resistor (4), and the junction point of the
bridge to the switching threshold resistor (4) is connected to
the signal input (2a) of the comparator (2).

25 2. The circuit arrangement of claim 1, characterized in
that the energy-storing element (3) is an inductive resistor.

3. The circuit arrangement of claim 1, characterized in
that the inductive resistor (3) is a magnetic field probe (12).

30 4. The circuit arrangement of claim 1, characterized in
that the magnetic field probe (12) is used to detect the magnetic

field of a core (13) of a compensation current sensor.

5 5. The circuit arrangement of claim 1, characterized in that the comparator (2) is an analog comparator, which as its output signals furnishes digital signals.

6. The circuit arrangement of claim 1, characterized in that the comparator (2) is embodied as a digital gate.

10 7. The circuit arrangement of claim 1, characterized in that the switches (7, 8, 9, 10) are MOSFETs, of which two (9, 10) are triggered directly and two (7, 8) are triggered via inverters (5, 6) from the outputs (1a, 1b) of the flip-flop (1).

15 8. The circuit arrangement of claim 1, characterized in that in the transverse branch of the bridge, a series resistor (11) is connected in series with the energy-storing element (3).

20922ED-60263001